



IURC Summer 2015 Capacity Assessment

Indiana Municipal Power Agency

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Presentation Topics

- **Company Background**
- **Generation Resources**
- **EE and Renewable Energy**
- **EPA Rules**
- **2015 Load/Resource Balance**
- **Summary**
- **Other Issues**



Indiana Municipal Power Agency

- Non profit full requirements wholesale provider to 60 municipally owned electric distribution systems
- Load in both MISO and PJM
- Portfolio of agency-, joint- and member-owned resources and purchased power contracts
- Joint owner in JTS, but does not operate T&D facilities
- Wholesale only, no retail customers or retail meters



Indiana Municipal Power Agency

- Governed by member utilities
- Member communities represent a population of approximately 335,000
- Member utilities governed by local councils and boards



Generating Resources

(Capacity Represents Summer ICAP Ratings)



Gibson 5 - 155 MW



Trimble County 1&2 - 162 MW



Prairie State 1&2 - 206 MW



Anderson & Richmond CTs - 205 MW



Georgetown 2&3 - 154 MW



Whitewater Valley - 90 MW



Energy Efficiency

- IMPA Energy Efficiency Program
 - Residential Home Audit tools
 - Residential High Efficiency HVAC, rebates for:
 - High Efficiency Air to Air Heat Pumps and A/C (>16 SEER)
 - Geothermal Heat Pumps (Closed >17.1 SEER, Open >21.2 SEER)
 - Commercial and Industrial, prescriptive rebates for:
 - Variable Frequency Drive (VFD) Pumps and Motors
 - HVAC (Heat Pumps, AC and Chillers)
 - Refrigeration, Food Service and Controls
 - Lighting



Renewable Energy

- Wind PPA
 - 50 MW
 - Iowa Wind Farm
 - Approximately 2.5% of IMPA energy requirements
- Small Solar facilities
 - Solar facilities in service in Richmond, Frankton and Rensselaer, Indiana
 - One MW each
 - Six parks under development – 10 MW total
- Net Metering Tariff
- Green Power Program

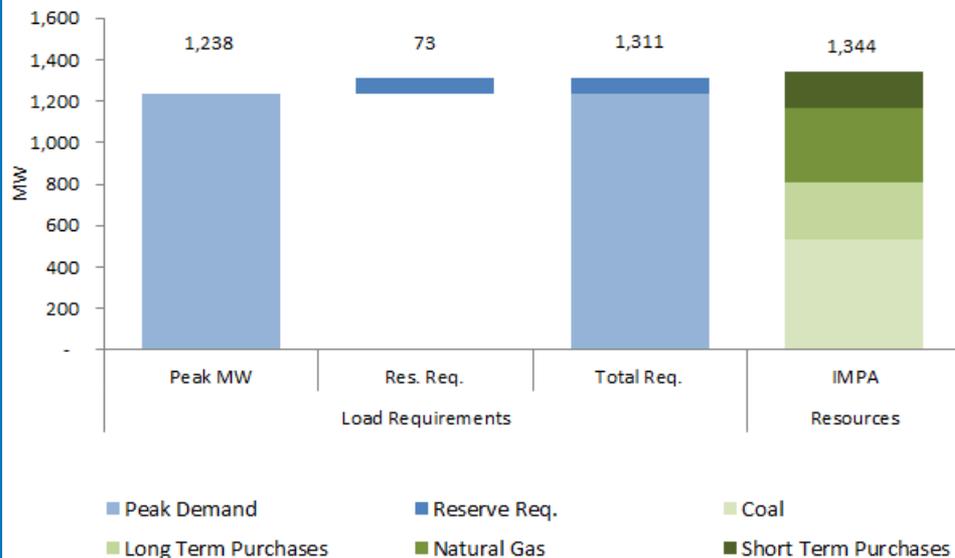


EPA Rules - MATs

- In general, IMPA owned generation resources are well-situated
- Most of IMPA's coal fired resources utilize state of the art systems to control SO₂ and NO_x
- Gibson #5 (155 MW) will require the most extensive upgrades to comply with MATS. The upgrades will consist of a combination of modifications to the systems to control mercury, particulate, and HCl
- Trimble County #1 (65 MW) will require an upgrade to the particulate matter control system to comply with MATS
- WWVS is installing DSI and PAC systems to comply with MATS
- Trimble County #2 (97 MW) and Prairie State #1 & #2 (206 MW) will not require any modifications to comply
- IMPA CTs will not require any modifications to comply



2015 Balance of Loads and Resources



Load Requirements

IMPA Peak Demand Requirements UCAP
1,238

Resources – UCAP

Gibson #5	149
Trimble County 1 & 2	145
Prairie State 1 & 2	154
WWVS	89
PJM CTs	194
MISO CTs	147
Member Owned Generation	16
Purchased Power Contracts	271
Net Market Capacity	179
Total Resources – UCAP	1,344
Required Reserves per (RTO Constructs)	73
Actual Reserves	106
UCAP Reserve Margin	8.6%



Summer Readiness



- IMPA serves wholesale load in both MISO and PJM
- 24 Hour market operations center in Carmel, IN
- Back up operations center at Anderson CT site
- All market operation coordinators are PJM Certified

- In contact with balancing authorities to take appropriate action in case of system emergencies



Conclusion

- IMPA is in compliance with MISO and PJM resource adequacy constructs for the summer of 2015
- IMPA has sufficient resources to meet its member needs during the summer of 2015



Other Issues

- IRP



IRP – Focus

- IRP is a useful tool that keeps utilities focused on their future plans and the risks embedded in their portfolios and/or markets
- 20 year planning horizon, filed every two years
- Given the frequency of filing, the immediate focus of the IRP is 3-5 years
- The 3 year action plan is more actionable than the resources the model selects in the outer years which could be 6 to 8 IRP filings away
- Goal is to develop robust plans under a variety of plausible futures (scenario planning)



IRP – Portfolio Risk

- Due to the high correlation between so many variables, single variable sensitivity analysis often produces misleading results
- In IMPA's 2013 IRP, stochastic analysis was performed using 50 scenarios of correlated input variables
- Stochastic analysis is a useful tool to understand how the portfolio behaves under different futures
- Using statistical analysis, individual variables can be isolated to determine their relative impact on the portfolio's risk – Tornado Charts



IRP – Portfolio Risk

- For the 2015 IRP, IMPA will produce expansion plans under several, likely 3 to 5, different visions of the future
 - Base, Green, Deregulation, etc.
- These expansion plans will then be tested in the stochastic analysis
- The relative bandwidth around the expected results provides a good indicator of the risk in that expansion plan
- In theory, the expansion plan that performs “best” in minimizing cost and risk is the preferred plan

